

BRUN-BUISSON et al  
Appl. No. 10/559,707  
April 7, 2008

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**APR 07 2008**

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings of claims in the application:

1-10 (cancelled).

11 (currently amended). Process for preparing an ethanolamine having an improved colour quality, ~~characterised in that it comprises a said process comprising~~ contacting of an ethanolamine with an activated carbon free of one or more metals ~~chosen~~ selected from rhenium, ruthenium, rhodium, palladium, osmium, iridium, platinum and silver, under an atmosphere free of hydrogen.

12 (currently amended). Process according to claim 11, ~~characterised in that~~ wherein the ethanolamine is an ethanolamine or a mixture of two or more ethanolamines ~~chosen~~ selected from monoethanolamine (MEA), diethanolamine (DEA) and preferably triethanolamine (TEA).

13 (currently amended). Process according to claim 11, ~~characterised in that~~ wherein the ethanolamine is prepared in a synthesis stage by reacting ethylene oxide with ammonia, ~~preferably in aqueous medium.~~

14 (currently amended). Process according to claim 11, ~~characterised in that~~ wherein the ethanolamine has initially, prior to its contacting with the activated carbon, a

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colour index (according to ASTM standard D 1209) of more than 40 Pt/Co, preferably more than 50 Pt/Co, and optionally a content by weight of metal, preferably of iron, equal to or more than 6 parts per million (ppm), more particularly equal to or more than 8 ppm, in particular equal to or more than 10 ppm.

15 (currently amended). Process according to claim 11, characterised in that wherein the activated carbon has a specific surface area ( $N_2$  BET) of from 500 to 5000  $m^2/g$ , preferably from 500 to 2500  $m^2/g$ , more particularly from 700 to 2000  $m^2/g$ .

16 (currently amended). Process according to claim 11, characterised in that wherein the contacting of the ethanolamine with the activated carbon is carried out at a temperature of from 10 to 200°C, preferably from 15 to 100°C, more particularly from 20 to 80°C.

17 (currently amended). Process according to claim 11, characterised in that wherein the contacting of the ethanolamine with the activated carbon is carried out for a period sufficient to reduce the colour of the ethanolamine, preferably for a period such that the colour index (according to ASTM standard D 1209) of the ethanolamine becomes equal to or less than 50 Pt/Co, preferably equal to or less than 40 Pt/Co, more particularly equal to or less than 30 Pt/Co.

18 (currently amended). Process according to claim 11, characterised in that wherein the mean residence time of the ethanolamine contacted with the activated

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carbon is chosen in a range of from 10 minutes to 18 hours, ~~preferably from 30 minutes to 12 hours, more particularly from 1 to 8 hours.~~

19 (currently amended). Process according to claim 11, ~~characterised in that wherein~~ it is carried out during or after the stage of preparation of the ethanolamine, ~~preferably during or after the stage of purification of the ethylene.~~

20 (currently amended). Process for manufacturing a triethanolamine (TEA) having an improved colour quality, which process comprises the following stages:

(i) a stage for synthesising TEA by the contacting of ethylene oxide with ammonia in aqueous medium, so as to form a crude TEA containing monoethanolamine (MEA), diethanolamine (DEA) and TEA, as a mixture with water and ammonia in excess and/or not having reacted,

(ii) a stage for separating the crude TEA and the mixture of water and ammonia, so as to isolate and recover the crude TEA, and

(iii) a stage for purifying the TEA by distillation of the crude TEA, so as to separate substantially the MEA and the DEA from the TEA, and to isolate and recover a purified TEA containing at least 85 wt % of TEA,

~~which process is characterised in that wherein,~~ after the separation stage (ii) or during or after the purification stage (iii), the crude or purified TEA is contacted with an activated carbon free of one or more metals ~~chosen~~ selected from rhenium, ruthenium, rhodium, palladium, osmium, Iridium, platinum and silver, under an atmosphere free of hydrogen.

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21 (new). Process according to claim 13, wherein the ethanolamine is prepared in a synthesis stage by reacting ethylene oxide with ammonia in aqueous medium.

22 (new). Process according to claim 14, wherein the ethanolamine has a colour index (according to ASTM standard D 1209) of more than 50 Pt/Co, and optionally a content by weight of metal, preferably of iron, equal to or more than 6 parts per million (ppm), more particularly equal to or more than 8 ppm, in particular equal to or more than 10 ppm.

23 (new). Process according to claim 15, wherein the activated carbon has a specific surface area ( $N_2$  BET) of from 500 to 2500  $m^2/g$ , more particularly from 700 to 2000  $m^2/g$ .

24 (new). Process according to claim 15, wherein the activated carbon has a specific surface area ( $N_2$  BET) of from 700 to 2000  $m^2/g$ .

25 (new). Process according to claim 11, wherein the contacting of the ethanolamine with the activated carbon is carried out at a temperature of from 15 to 100°C, more particularly from 20 to 80°C.

26 (new). Process according to claim 11, wherein the contacting of the

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ethanolamine with the activated carbon is carried out at a temperature of from 20 to 80°C.

27 (new). Process according to claim 17, wherein the contacting of the ethanolamine with the activated carbon is carried out for a period such that the color index (according to ASTM standard D 1209) of the ethanolamine becomes equal to or less than 50 Pt/Co.

28 (new). Process according to claim 17, wherein the contacting of the ethanolamine with the activated carbon is carried out for a period such that the color index (according to ASTM standard D 1209) of the ethanolamine becomes equal to or less than 40 Pt/Co.

29 (new). Process according to claim 17, wherein the contacting of the ethanolamine with the activated carbon is carried out for a period such that the color index (according to ASTM standard D 1209) of the ethanolamine becomes equal to or less than 30 Pt/Co.

30 (new). Process according to claim 18, wherein the mean residence time of the ethanolamine contacted with the activated carbon is chosen in a range of from 30 minutes to 12 hours.

31 (new). Process according to claim 18, wherein the mean residence time of

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the ethanolamine contacted with the activated carbon is chosen in a range of from 1 to 8 hours.

32 (new). Process according to claim 19, wherein it is carried out during or after the stage of purification of the ethylene.